

WE CLAIM:

1. A touch control module comprising:

a touch control unit operable so as to generate a contact signal in response to contact with an object;

5 a computing unit coupled electrically to said touch control unit so as to receive the contact signal therefrom, said computing unit being configured to generate different control signals, each of which is generated in accordance with a contact position of the object with said touch control unit; and

10 a transmission interface including a set of transmission lines coupled electrically to said computing unit, each of said transmission lines being used to transmit a respective one of the control signals;

15 whereby, said transmission interface is adapted to provide the control signals to a host unit for scrolling control of a graphical user interface display of the host unit.

2. The touch control module as claimed in Claim 1, wherein

20 said touch control unit includes first and second contact regions, said computing unit generating a first one of the control signals in response to contact of the object with said first contact region, and a second one of the control signals in response to contact of the object with said second contact region.

25 3. The touch control module as claimed in Claim 2, wherein said touch control unit further includes third and fourth

contact regions, said computing unit generating a third one of the control signals in response to contact of the object with said third contact region, and a fourth one of the control signals in response to contact of 5 the object with said fourth contact region.

4. The touch control module as claimed in Claim 3, wherein said first, second, third and fourth contact regions are interconnected to form a closed loop.

10 5. The touch control module as claimed in Claim 4, wherein said first, second, third and fourth contact regions are interconnected to form a rectangular loop.

6. The touch control module as claimed in Claim 5, wherein:

15 said first and second contact regions are in the form of strips that extend along parallel first and second axes, respectively,

said third and fourth contact regions being in the form of strips that extend along parallel third and fourth axes, respectively,

20 said third and fourth axes being transverse to the first and second axes.

7. The touch control module as claimed in Claim 6, wherein each of said first, second, third and fourth contact regions is formed with a plurality of parallel scan lines, 25 each of which is transverse to the axis of the respective one of said contact regions.

8. The touch control module as claimed in Claim 3, wherein
said first and second contact regions are interconnected
at one end, and said third and fourth contact regions
are connected to said one end of said first and second
5 contact regions.

9. The touch control module as claimed in Claim 8, wherein
said first and second contact regions are in the form
of strips that extend along a first axis, and said third
and fourth contact regions are in the form of strips
10 that extend along a second axis transverse to the first
axis.

10. The touch control module as claimed in Claim 9,
wherein each of said first, second, third and fourth
contact regions is formed with a plurality of parallel
15 scan lines, each of which is transverse to the axis of
the respective one of said contact regions.

11. The touch control module as claimed in Claim 1,
wherein said touch control unit includes a first contact
region, said computing unit generating a first one of
20 the control signals in response to movement of the object
along said first contact region in a first direction,
and a second one of the control signals in response to
movement of the object along said first contact region
in a second direction opposite to the first direction.

25 12. The touch control module as claimed in Claim 11,
wherein said touch control unit further includes a second
contact region, said computing unit generating a third

one of the control signals in response to movement of the object along said second contact region in a third direction, and a fourth one of the control signals in response to movement of the object along said second contact region in a fourth direction opposite to the third direction.

5 13. The touch control module as claimed in Claim 12, wherein said first contact region is connected at one end to said second contact region.

10 14. The touch control module as claimed in Claim 13, wherein said first contact region is in the form of a strip that extends along a first axis, and said second contact region is in the form of a strip that extends along a second axis transverse to the first axis.

15 15. The touch control module as claimed in Claim 14, wherein each of said first and second contact regions is formed with a plurality of parallel scan lines, each of which is transverse to the axis of the respective one of said contact regions.

20 16. The touch control module as claimed in Claim 2, wherein said touch control unit further includes a third contact region, said computing unit generating a third one of the control signals in response to movement of the object along said third contact region in a first direction, and a fourth one of the control signals in response to movement of the object along said third contact region in a second direction opposite to the

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first direction.

17. The touch control module as claimed in Claim 16,
wherein said third contact region has opposite ends
connected respectively to said first and second contact
regions.

18. The touch control module as claimed in Claim 17,
wherein:

10 said first and second contact regions are in the form
of strips that extend along parallel first and second
axes, respectively,

 said third contact region being in the form of a strip
that extends along a third axis transverse to the first
and second axes.

19. The touch control module as claimed in Claim 18,
15 wherein each of said first, second and third contact
regions is formed with a plurality of parallel scan lines,
each of which is transverse to the axis of the respective
one of said contact regions.

20. The touch control module as claimed in Claim 1,
20 wherein each of the control signals is a pulse signal
that contains at least one pulse.

25 21. The touch control module as claimed in Claim 20,
 wherein each of the control signals contains
 displacement information of the object on said touch
control unit.

22. The touch control module as claimed in Claim 21,
 wherein each of the control signals contains a number

of pulses indicative of the displacement information.

23. The touch control module as claimed in Claim 20,
wherein the pulse signal is a square wave signal.

24. An electronic device comprising:

5 a host unit including an operating system and a graphical user interface (GUI) display having a scroll bar feature and operably associated with said operating system;

10 a touch control unit operable so as to generate a contact signal in response to contact with an object;

15 a computing unit coupled electrically to said touch control unit so as to receive the contact signal therefrom, said computing unit being configured to generate different control signals, each of which is generated in accordance with a contact position of the object with said touch control unit; and

20 a transmission interface including a set of transmission lines interconnecting electrically said computing unit and said host unit, each of said transmission lines being used to transmit a respective one of the control signals to said host unit;

25 said operating system of said host unit being responsive to the control signal received from said transmission interface for scrolling control of said GUI display.

26. The electronic device as claimed in Claim 24, wherein said touch control unit includes first and second contact

regions, said computing unit generating a first one of the control signals in response to contact of the object with said first contact region, and a second one of the control signals in response to contact of the object with said second contact region.

5 26. The electronic device as claimed in Claim 24, wherein said touch control unit includes a first contact region, said computing unit generating a first one of the control signals in response to movement of the object along said 10 first contact region in a first direction, and a second one of the control signals in response to movement of the object along said first contact region in a second direction opposite to the first direction.

15 27. The electronic device as claimed in Claim 24, wherein each of the control signals is a pulse signal that contains at least one pulse.

28. The electronic device as claimed in Claim 27, wherein each of the control signals contains displacement information of the object on said touch control unit.

20 29. The electronic device as claimed in Claim 28, wherein each of the control signals contains a number of pulses indicative of the displacement information.

30. The electronic device as claimed in Claim 27, wherein the pulse signal is a square wave signal.